IENG 474

***Course: IENG 474***

***Instructor: Dr. Jack Byrd Jr PhD***[***jabyrd@mix.wvu.edu***](mailto:jabyrd@mix.wvu.edu) ***304-293-3612 x 1***

***Semester: Spring 2018***

***Number of Credit Hours: 3***

***Description: This course will present basic concepts and practices that are necessary to convert a technology idea into an entrepreneurial business.***

***Learning Outcomes***

At the end of the course students will be able to:

1. Develop a plan to develop an entrepreneurial business from a technology idea.
2. Apply the analytical tools they need to develop a realistic business plan.
3. Apply content from various engineering disciplines into the development of a business concept for the student’s technology idea.

***Course Topics***

**A. The Basics of Becoming an Entrepreneur (8 lessons)**

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| Lesson 1 | What is a Technology Entrepreneur DUE 1-10-18 |
| Lesson 2 | Characteristics of a Technology Entrepreneur 1-12-18 |
| Lesson 3 | Entrepreneurialism as a Career for Engineers 1-17-18 |
| Lesson 4 | Lifecycle of a Technology Entrepreneurial Business 1-19-18 |
| Lesson 5 | Why Technology Entrepreneurs are Important in Our Society 1-22-18 |
| Lesson 6 | Assessing Your Entrepreneurial Skills 1-24-18 |
| Lesson 7 | An Entrepreneurial Development Plan 1-26-18 |
| Lesson 8 | The Importance of a Business Plan in a Technology Business 1-29-18 |

**B. Where Entrepreneurial Ideas Come From (7 lessons)**

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| Lesson 1 | Learning to Look for Technology Business Ideas 1-31-18 |
| Lesson 2 | The Start of a Technology Business Ideas Case Study 2-02-18 |
| Lesson 3 | Case Studies of Successful Technology Entrepreneurial Ideas 2-05-18 |
| Lesson 4 | A Technology Idea Scavenger Hunt 2-07-18 |
| Lesson 5 | Developing Your Technology Idea into a Business Concept 2-09-18 |
| Lesson 6 | Testing the Feasibility of Your Technology Idea 2-12-18 |
| Lesson 7 | Protecting Your Idea (Patents, Copyrights, TradeMarks) 2-14-18 |

**C. Assessing the Market for Your Idea (5 lessons)**

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| Lesson 1 | Using Databases to Identify Market Potential 2-16-18 |
| Lesson 2 | Conducting Focus Groups to Evaluate Market Interest in Your Idea 2-19-18 |
| Lesson 3 | Evaluating the Realistic Potential for an Idea 2-21-18 |
| Lesson 4 | Market Size and Price Relationship 2-23-18 |
| Lesson 5 | Doing a Competitive Assessment 2-26-18 |

**D. Developing a Commercialization Plan for Your Idea (4 lessons)**

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| Lesson 1 | Understanding What it Will Take to Commercialize Your Idea 2-28-18 |
| Lesson 2 | Thinking Through Your Commercialization Options 3-02-18 |
| Lesson 3 | Developing a Commercialization Budget (Funding R&D) 3-05-18 |
| Lesson 4 | Developing a Commercialization Schedule 3-07-18 |

**E. Developing a Marketing Plan (6 lessons)**

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| Lesson 1 | Basic Marketing Concepts for Technology Business 3-09-18 |
| Lesson 2 | Identifying Initial Market Segments for Technology Businesses 3-12-18 |
| Lesson 3 | Developing a Technology Marketing Strategy 3-14-18 |
| Lesson 4 | Branding Your Technology Idea 3-16-18 |
| Lesson 5 | Estimating Your Marketing Costs 3-19-18 |
| Lesson 6 | Developing a Marketing Team 3-21-18 |

**F. Developing Your Business Organization (6 lessons)**

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| Lesson 1 | Basic Organizational Concepts 3-23-18 |
| Lesson 2 | Assessing the Business Skills You Need to Complement Your Eng’r Skills 6-28-17 |
| Lesson 3 | Recruiting Your Organizational Team 3-26-18 |
| Lesson 4 | Developing Organizational Responsibilities 3-28-18 |
| Lesson 5 | Developing a Compensation Plan 3-30-18 |
| Lesson 6 | Different Forms of Legal Structure 4-02-18 |

**G. Raising Money for Your Business (9 lessons)**

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| Lesson 1 | Developing an Estimate of Start-up Costs 4-04-18 |
| Lesson 2 | Developing an Estimate of Annual Costs 4-06-18 |
| Lesson 3 | Developing a Pricing Plan 4-09-18 |
| Lesson 4 | Developing Revenue Estimates 4-11-18 |
| Lesson 5 | Developing a Cash Flow Analysis 4-13-18 |
| Lesson 6 | Estimating Your Financial Needs 4-16-18 |
| Lesson 7 | Sources for Financial Support 4-18-18 |
| Lesson 8 | Understanding the Venture Capital Process 4-20-18 |
| Lesson 9 | Keys to Negotiating a Financial Agreement 4-23-18 |
|  | Summary Business Plan 4-25-18 |

***Course Format***

This course will be taught as an Internet based course, using the E Campus System.

***Student Evaluation***

The grade in this course will be based upon three components. The first component will be your response to each assignment. Each assignment is worth 10 points. There will be 45 assignments that will comprise 70% of the final grade in the course. You will be given a schedule to follow to complete the lessons (see attached). You will be given a due date for each assignment. You will lose one point out of 10 for every day the assignment is late.

The second component of the grade will be the quality of your business idea. You will be given frequent feedback on your business. Part of the grade will be determined by how you used the feedback. At the end of the semester, all business ideas will be evaluated based upon the viability of the idea. This component will be 20% of the final grade. You will be given an interim evaluation for your idea at the conclusion of the lessons for section C in the course.

The final component of the grade will be the written business plan. The specific elements of this grade include:

* The technology worthiness of the idea
* The identification of markets that are realistic
* The development of a commercialization plan including an R & D Plan
* The development of a realistic financial plan
* This part of your grade will be 10%

Students will complete on-line readings for each lesson. They will then apply what they read in the lesson to their own technology business idea. I will respond to each written assignment and students will be expected to adjust their plans to my suggestions. Assignments will be due roughly every day according to a schedule shown on eCampus.

***Caution***

The work in the course is to be your own. In the past some students have had someone else do the work for them. It doesn’t take long for me to figure out that this is happening. Using someone else to do your work will result in an unforgivable F.

***TextBook***

Each Lesson contains a text chapter written by Dr. Jack Byrd, Jr. This is the only text used for the course no other course materials are used in the course.

90-100 = A  
 80-89 = B  
 70-79 = C  
 60-69 = D  
 < 60 = F

West Virginia University is committed to social justice. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color or national origin. The instructor of this course concurs with that commitment and expects to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. Any suggestion as to how to further such a positive and open environment in this class will be appreciated and given serious consideration. If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise the instructor and make appropriate arrangements with Disability Services (293-6700).